



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,576	04/22/2004	Hiroshi Nishizawa	10873.1438US01	6727
23552	7590	09/16/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			YAM, STEPHEN K	
		ART UNIT	PAPER NUMBER	
		2878		
DATE MAILED: 09/16/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/829,576	NISHIZAWA, HIROSHI 
	Examiner	Art Unit
	Stephen Yam	2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 April 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>0404</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakagishi et al. US 2001/0010562.

Regarding Claim 1, Nakagishi et al. teach (see Fig. 1-5) an imaging apparatus comprising a three-dimensional circuit board (1) transmitting virtually no visible light (since a CCD image sensor contains an image sensor array mounted on an opaque board), the three-dimensional circuit board comprising a cylindrical barrel portion (100 having lens assembly, since cameras use cylindrical barrels as lens assemblies) (see Fig. 5 and Paragraphs 0003 and 0025), and a bottom portion (see Fig. 5), a semiconductor imaging device (image sensor array on (1)- see extending component of (1) shown in Fig. 1) held by the three-dimensional circuit board (see Fig. 1), an optical system (lens) (see Paragraph 0003) that is held by the barrel portion and directs light to the semiconductor imaging device (see Paragraph 0003), and a flexible printed circuit (3), disposed on the three-dimensional circuit board on a side opposite to the barrel

portion (see Fig. 5), for sending a signal to and receiving a signal from the semiconductor imaging device (since the CCD is electrically connected to control circuitry through the flexible printed circuit- see Paragraph 0036), wherein a region of the flexible printed circuit facing the semiconductor imaging device has sufficient shielding characteristics (using (2)) in a range sensitive to light reception by the semiconductor imaging device (since (2) is metal (see Paragraph 0029), it is opaque to light).

Regarding Claim 2, Nakagishi et al. teach the semiconductor imaging device having a small thickness (see Fig. 1 and 5). Since the thickness *obtained by grinding the back surface* does not structurally limit the semiconductor imaging device as claimed in an apparatus, the limitations of making the device through "grinding the back surface" cannot be given patentable weight in an apparatus claim.

Regarding Claim 3, Nakagishi et al. teach in the region of the flexible printed circuit facing the semiconductor imaging device, the shielding characteristics against light with a wavelength longer than a visible range is higher than that against light in the visible range (since an infrared cutting filter is provided above the flexible printed circuit- see Paragraph 0003).

Regarding Claim 5, Nakagishi et al. teach the metal foil containing aluminum as a main component (see Paragraph 0029).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagishi et al.

Regarding Claim 4, Nakagishi et al. teach the apparatus in Claim 1, according to the appropriate paragraph above. Nakagishi et al. teach a metal foil (2) attached on the region of the flexible printed circuit facing the semiconductor imaging device (see Fig. 1). Nakagishi et al. do not teach the metal foil *laminated* on the flexible printed circuit. It is well known in the art to laminate two layers of material, to permanently attach them for increased rigidity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the metal foil with the flexible printed circuit, in the apparatus of Nakagishi et al., to increase structural rigidity and durability.

Regarding Claim 6, Nakagishi et al. teach the apparatus in Claim 1, according to the appropriate paragraph above. Nakagishi et al. also teach the metal foil containing aluminum as a main component (see Paragraph 0029). Nakagishi et al. do not teach the metal foil containing silver or nickel as a main component. It is well known in the art to substitute different metals in constructing a metallic component, depending on the desired strength, durability, conductivity, or other characteristics. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the metal foil containing silver or nickel as a main component, in the apparatus of Nakagishi et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa US Patent No. 6,654,064, teaches an imaging apparatus with a flexible printed circuit.

Hatanaka et al. US Patent No. 5,672,902, teaches an image sensor with a flexible printed circuit.

Honda et al. US Patent No. 6,476,417, teaches an imaging apparatus with a cylindrical barrel and a flexible printed circuit with a shading plate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SY



THANH X. LUU
PATENT EXAMINER